NV ENERGY
REID GARDNER GENERATING STATION
FACT SHEET

December 2014

Location

NV Energy owns and operates the Reid Gardner Generating Station (Station), which is located near Moapa, Nevada. The electricity producing facility is situated about 52 miles northeast of Las Vegas and became commercially operational in 1965.

Background

The Reid Gardner Generating Station is located within the Moapa Valley, which is a relatively flat-bottomed desert valley that includes the Muddy River, a spring-fed perennial stream that runs through the Station property. The Station property also includes land on a mesa to the south that is elevated over one hundred feet above the rest of the Station. Prior to 1964, the area was native desert or irrigated pastureland. A dairy was previously operated on the land east of the Station along both sides of the Muddy River. The Bureau of Land Management (BLM) owns most of the vacant surrounding land to the north and south of the Station, but there is an additional parcel of vacant private property just north of the Station. At its closest point, land owned by the Moapa Band of Paiutes is located approximately 500 feet to the west and northwest of the NV Energy property line and residences are located approximately one-quarter mile northwest of the NV Energy property line. The main plant area is located approximately one mile from the northwest property line. The plant has four power generating units. Units 1-3 will be shut down as of December 31, 2014. Unit 4 is anticipated to continue operation until December 2017.

Details of the remediation project including maps, reports, and associated documentation are available for public inspection at the Document Repository located at the Moapa Town Library, 1340 East Highway 168, Moapa, NV 89025
Phone: (702) 864-2438.

The Station gets its water supply from a combination of off-site groundwater wells and an off-site surface water withdrawal from the Muddy River. The water is combined and stored in raw water storage ponds.

Water is used on-site for process cooling, air emission reductions, and other uses. To reduce water usage, the Station recycles its water as much as possible. When the dissolved salts in the recycled water have become too high for additional reuse, the water is discharged to one of several double-lined evaporation ponds. There are no surface water discharges of wastewater from the Station, as the plant is a Zero Liquid Discharge facility.

The evaporation ponds were originally designed and constructed according to the best available engineering practices and regulations in effect at the time. The early ponds, for example, used clay material in the liners and clay berms.

Today, all of the ponds are high density polyethylene (HDPE) double-lined with an inner leak-detection layer. Prior to the use of current lining technologies in ponds at the Station, some water containing elevated concentrations of dissolved salts migrated through the clay material and into the area groundwater. This has necessitated remediation (clean-up) activities in cooperation with the State of Nevada.

Remediation Overview

The Nevada Division of Environmental Protection (NDEP), Bureau of Corrective Actions has primary authority and responsibility for regulatory oversight of groundwater and soil characterization and clean-up activities at the Station.

In May 1997, the NDEP issued an Administrative Order requiring NV Energy to submit a site-wide plan and schedule to eliminate the migration of contaminants into the groundwater. In compliance with the order, NV Energy submitted a plan and a schedule committing to either line all evaporation ponds with double synthetic liner systems or remove the ponds from service. NV Energy completed compliance with all of the requirements of the 1997 Order by 2010. NV Energy has also constructed two new HDPE double-lined evaporation ponds on the mesa to receive plant wastewater.

NV Energy and the NDEP entered into the current Administrative Order on Consent (AOC) for the Station on February 22, 2008. The AOC calls for NV Energy to continue with environmental contaminant characterization activities and to identify clean-up measures, as necessary, for soil and groundwater at the Station. Additionally, the AOC calls for the implementation and long-term operation and maintenance of NDEP-approved corrective actions for the Station.

In addition to the groundwater contamination associated with the on-site ponds, various other isolated areas of soil and/or groundwater contamination have been identified at the Station. All areas of soil and groundwater contamination associated with the Station operations will be addressed through implementation of the AOC by characterizing soil and groundwater contamination and then, as appropriate, through implementation of NDEP-approved clean-up activities.

In 2009, an 850,000 gallon diesel fuel aboveground storage tank was demolished. Soil testing following tank demolition indicated there were minimal impacts from the fuel tank. However, leaks from former underground piping associated with the diesel tank have caused some groundwater contamination. A remediation system has been operating since 1986 to pump out groundwater and diesel fuel floating on the groundwater in the area of past piping leaks

Some cleanup activities have already been conducted under the AOC. In 2010, over 400,000 cubic yards of pond solids were removed from the Former Ponds D and G areas. A portion of the former Pond D area has now been converted into two lined stormwater retention ponds and the area of Pond G is no longer in use.

Pond F was removed from service in 2011, and over 23,600 cubic yards of pond solids were removed from the pond in December 2012-January 2013. Pond F is no longer in use.

Current Activities

NV Energy has reviewed hundreds of historical documents and existing soil and groundwater data to identify potential sources of soil and groundwater contamination at the Station. The Preliminary Source Area Identification and Characterization Report, summarizing this research, was finalized in July 2013.

In advance of completion of the Preliminary Source Area Identification and Characterization Report, NV Energy voluntarily began investigating a source area referred to as Waste Management Unit 7 (WMU-7). This area is located on the mesa and partially on land owned by the BLM. WMU-7 was previously used for disposal of solid waste from the Station. NV Energy is currently pursuing purchase of this land. In addition, NV Energy is evaluating alternatives for implementation of corrective action at WMU-7. Following NDEP approval of the preferred option, a Corrective Action Plan and implementation schedule will be prepared by NV Energy.

Many site-related chemicals at the Station are naturally occurring in soil and groundwater. When soil and groundwater samples are collected at the Station, the concentrations are evaluated to determine if they are due to Station activities. In order to complete these evaluations, naturally occurring background concentrations must be established for the Station. Soil and groundwater sampling in accordance with the NDEP-approved Evaluation of Background Conditions Work Plan was completed in 2012. This sampling effort included installation and sampling of new groundwater monitoring wells for evaluating background concentrations in groundwater and collection of soil samples to evaluate background concentrations in soil. A report summarizing the data, including a statistical evaluation of background concentrations received NDEP concurrence on November 7, 2014.

Pond solids removal began at Ponds 4A, 4C1 and 4C2 in September 2014 and is scheduled to be completed in 2015. Additionally, NV Energy expects to begin removing solids from the Pond E2 area in early 2015 and to complete this work in the fourth quarter of 2015. It is estimated that over one million cubic yards of pond solids will be removed from these pond areas during this current effort.

NV Energy began an investigation in August 2014 to further evaluate the extent of petroleum hydrocarbons in underground soils and groundwater in the Station area. The investigations are ongoing and scheduled to be finalized in 2015.

A Preliminary Geochemical Conceptual Site Model is currently being prepared for the Station to evaluate the role that geochemical mechanisms may play in groundwater contaminant migration. The draft Preliminary Geochemical Conceptual Site Model report is expected to be issued by NV Energy in the second quarter of 2015.

In August 2014, preliminary investigations were conducted in and around the Muddy River to evaluate potential groundwater interaction with the river. This information is being used to guide development of characterization work plans for the Muddy River, Pond 4A, 4B/4C, D, E, F and G areas. Field work to complete characterization in these areas is scheduled to be concluded in third quarter of 2015.

Reports completed to date and located in the Information Repository at the Moapa Town Library include:

1340 E Highway 168
Moapa, NV 89025

- Encyclopedia of Supporting Documentation – List of historical documents that provide background information.
- Document and Response to Comments Tracking System – System used to document NV Energy's responses to NDEP's comments on draft reports.
- Closure Plan – Summary of applicable regulations for investigating and cleaning up the Station.
- Health and Safety Plan - Describes precautions taken to protect health and safety of personnel conducting field activities.
- Community Relations Plan – Describes how community will be involved during implementation of the AOC.
- Quality Assurance Project Plan – Describes measures to ensure data collected and used for decision making meet quality assurance/quality control standards.
- Site Related Chemicals (SRC) Document – List of chemicals that may exist in soils or groundwater at the Station based on available information.
- Waste Management Unit 7 (WMU-7) Sampling and Analysis Plan – Outlines soil testing to be conducted at an area previously used for disposal of solid waste from the Station.
- Sampling and Analysis Plan for Diesel Impact to Soil – Outlines soil testing to be conducted in the vicinity of the 850,000-gallon above ground diesel fuel storage tank that was removed in 2009.

- Pond D Solids Removal Work Plan – Outlines pond solids removal and sampling activities in the Pond D area.

- Pond G Solids Removal Work Plan – Outlines pond solids removal and sampling activities in the Pond G area.

- Evaluation of Background Conditions Work Plan – Outlines soil and groundwater testing activities to better understand background contaminant concentrations.

- Sampling and Analysis Report for Diesel Impact to Soil – Reports results of soil testing conducted in the vicinity of the former above ground diesel fuel storage tank. The results indicated there were no significant impacts from the former 850,000 gallon diesel fuel storage tank.

- Pond D Solids Removal Completion Report - Reports pond solids removal and sampling activities in the former Pond D area. Approximately 290,000 cubic yards of pond solids were removed from the former Pond D area and disposed in a lined cell within the on-site permitted landfill.

- Pond G Solids Removal Completion Report - Reports pond solids removal and sampling activities in the former Pond G area. Approximately 113,200 cubic yards of pond solids were removed from the former Pond G area and disposed in a lined cell within the on-site permitted landfill.

- Waste Management Unit 7 (WMU-7) Sampling and Analysis Report – Reports results of soil and groundwater testing conducted at an area previously used for disposal of solid waste from the Station.

- Monitoring Well Installation Work Plan, Unit 4 Evaporation Ponds- Outlines the installation of new monitoring wells near the Unit 4 evaporation ponds (Ponds B and C).

- Pond F Solids Removal Work Plan- Outlines pond solids removal and sampling activities in the Pond F area.

- Evaluation of Background Conditions – Soil Data Validation Reports – Data validation reports for soil analytical data collected for the evaluation of background conditions.

- Evaluation of Background Conditions – First Quarter Groundwater Data Validation Reports – Data validation reports for groundwater analytical data collected during the first quarter of 2012 for the evaluation of background conditions.

- Evaluation of Background Conditions – Second Quarter Groundwater Data Validation Reports – Data validation reports for groundwater analytical data collected during the second quarter of 2012 for the evaluation of background conditions.

- Evaluation of Background Conditions – Third Quarter Groundwater Data Validation Reports – Data validation reports for groundwater analytical data collected during the third quarter of 2012 for the evaluation of background conditions.

- Evaluation of Background Conditions – Fourth Quarter Groundwater Data Validation Reports – Data validation reports for groundwater analytical data collected during the fourth quarter of 2012 for the evaluation of background conditions.

- Data Validation Reports Associated with Pond F Soil Sampling – Data validation reports for soil analytical data collected from the former Pond F footprint.

- First Semi-Annual 2013 RGS Groundwater Monitoring Report – Report of groundwater monitoring activities for the first quarter of 2013.

- Second Semi-Annual 2013 RGS Groundwater Monitoring Report – Report of groundwater monitoring activities for the third quarter of 2013.

- Preliminary Source Area Identification and Characterization Report – Report summarizing potential sources of soil and groundwater impacts at the Station.

- Laser Induced Fluorescence Investigation Work Plan – Former Underground Product Piping, Petroleum Tanks (Source Area 14) – Outlines diesel fuel investigation in soil and groundwater.

- Pond 4A Solids Removal Work Plan - Outlines pond solids removal and sampling activities in the Pond 4A area.

- Pond 4C-1 Solids Removal Work Plan - Outlines pond solids removal and sampling activities in the Pond 4C-1 area.

- Pond 4C-2 Solids Removal Work Plan - Outlines pond solids removal and sampling activities in the Pond 4C-2 area.

- Background Conditions Report – A report summarizing background soil and groundwater sampling efforts, including background level calculations and a statistical evaluation.

Community Liaisons for the Station:

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